

YP-US04017CT(711) SEQUENCE ver 2.txt  
SEQUENCE LISTING

JC05 Rec'd PCT/PTO 05 OCT 2005

<110> Yamanouchi Pharmaceutical Co., Ltd.  
Keio University  
Yasunaga, Kunio  
Yamaji, Noboru  
Suda, Toshio  
Oike, Yuichi

<120> Method of screening antiobesity agents and animal model of obesity

<130> YK0417PCT711

<150> JP 2003-163016

<151> 2003-06-06

<150> JP 2004-111500

<151> 2004-04-05

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<170> PatentIn version 3.1

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 Val Gly Pro Trp Arg Asp Cys Ala Glu Ala His Gly Ala Gly His Trp  
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acctgctggct gggccgtcgt gtagtagccg tgtggtgtga acagcagcag gaagtggagg 120  
ctggactgtc atccagagac ggcaggacgg ctctgtcaac ttcttcacca actggcagca 180  
ctacaaggtg tgtgcttggtg gtgggggtgt cagagactgc tgggcagaga ggacgcccc 240

YP-US04017CT(711) SEQUENCE ver 2.txt

accctcttcc tcctaccctt ccaggcgggc tttgggcgtc cagaaggaga atactggctg	300
ggcctggaac ctgtgcatca ggtgacaagc cgtggggacc acgagctgct gatactccta	360
gaggactggg ggggccgtgc agcacgcgcc cactacgaca gcttctcctt ggagcctgag	420
agtgaccact accgtctgcg gcttggccag taccacggcg atgccggaga ctccctctct	480
tggcacaatg acaaaacctt tcagcactgt ggatagggac agagactcat attctg	536

<210> 9  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 9  
 agaggctatt cggctatgac 20

<210> 10  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 10  
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<210> 11  
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<400> 11  
 tggcctctgt tatcatgctc 20

<210> 12  
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 <212> DNA  
 <213> Mus musculus

<400> 12  
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<210> 13  
 <211> 31  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: an artificially synthesized primer sequence

YP-US04017CT(711) SEQUENCE ver 2.txt

<400> 13  
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<210> 14  
<211> 39  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 14  
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<210> 15  
<211> 81  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: Sequence containing loxP

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cgacctgcag cccgggggat c 81

<210> 16  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 16  
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<210> 17  
<211> 20  
<212> DNA  
<213> Mus musculus

<400> 17  
cccactacga cagcttctcc 20

<210> 18  
<211> 20  
<212> DNA  
<213> Mus musculus

<400> 18  
agccgggtca acataacagc 20

YP-US04017CT(711) SEQUENCE ver 2.txt

<210> 19  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence  
 <220>  
 <223> Description of Artificial Sequence: an artificially synthesized primer sequence  
 <400> 19  
 gcgttaccca acttaatcg 19  
 <210> 20  
 <211> 18  
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 <223> Description of Artificial Sequence: an artificially synthesized primer sequence  
 <400> 20  
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 <210> 21  
 <211> 22  
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 <213> Mus musculus  
 <400> 21  
 tcgtgtagta gccgtgtggt gt 22  
 <210> 22  
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 <400> 22  
 cacctgatgc acaggttcca 20  
 <210> 23  
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 <212> DNA  
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 <400> 23  
 tggttgatcc tgccagtag 19  
 <210> 24  
 <211> 20  
 <212> DNA  
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 <400> 24  
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 <210> 25

YP-US04017CT(711) SEQUENCE ver 2.txt

<211> 23  
 <212> DNA  
 <213> Mus musculus  
  
 <400> 25  
 ccggtacagt gaaactgcga atg 23  
  
 <210> 26  
 <211> 19  
 <212> DNA  
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 <400> 26  
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 <210> 27  
 <211> 20  
 <212> DNA  
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 <400> 27  
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 <210> 28  
 <211> 17  
 <212> DNA  
 <213> Mus musculus  
  
 <400> 28  
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 <210> 29  
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 <212> DNA  
 <213> Mus musculus  
  
 <400> 29  
 catggttgga cttcagccc 19  
  
 <210> 30  
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 <400> 30  
 ggccccccagg aacttca 17  
  
 <210> 31  
 <211> 22  
 <212> DNA  
 <213> Mus musculus  
  
 <400> 31  
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 <210> 32

YP-US04017CT(711) SEQUENCE ver 2.txt

<211> 21  
 <212> DNA  
 <213> Mus musculus  
  
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 <210> 35  
 <211> 21  
 <212> DNA  
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 <400> 36  
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 <210> 37  
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 <212> DNA  
 <213> Mus musculus  
  
 <400> 37  
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 <210> 38  
 <211> 22  
 <212> DNA  
 <213> Mus musculus  
  
 <400> 38  
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 <210> 39



YP-US04017CT(711) SEQUENCE ver 2.txt

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<211> 22
<212> DNA
<213> Mus musculus

<400> 39
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<210> 40
<211> 18
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<400> 40
gatggcacgc agccctat 18

<210> 41
<211> 22
<212> DNA
<213> Mus musculus

<400> 41
cgacacggag agttaaagga ag 22

<210> 42
<211> 26
<212> DNA
<213> Mus musculus

<400> 42
cattgttcga tgtgtcgcct tcttgc 26

<210> 43
<211> 19
<212> DNA
<213> Mus musculus

<400> 43
cggagcgcaa tatgaaggt 19

<210> 44
<211> 20
<212> DNA
<213> Mus musculus

<400> 44
caaaaggaag acgacggagc 20

<210> 45
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: an artificially synthesized
primer sequence

<400> 45

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YP-US04017CT(711) SEQUENCE ver 2.txt  
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<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 46  
tgctagcccg aatgagaaat gagacagaat 30

<210> 47  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 47  
taggtaccat acagaatcca gctcaggtg 30

<210> 48  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 48  
ttggtacctt ggctggctcc catcctgg 28

<210> 49  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 49  
ttggtacctg acctcaggta atccacct 28

<210> 50  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

YP-US04017CT(711) SEQUENCE ver 2.txt

<400> 50  
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<210> 51  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 51  
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<210> 52  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 52  
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<210> 53  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: an artificially synthesized primer sequence

<400> 53  
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<210> 54  
<211> 21  
<212> DNA  
<213> Mus musculus

<400> 54  
gtcttggcct caggcctctg g 21

<210> 55  
<211> 24  
<212> DNA  
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<400> 55  
tacctcagtt acatgtgatt tatg 24

<210> 56

YP-US04017CT(711) SEQUENCE ver 2.txt

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<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: an artificially synthesized
        primer sequence

<400> 56
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<210> 57
<211> 28
<212> DNA
<213> Mus musculus

<400> 57
aggagatagg aacacccttg ggggtact 28

<210> 58
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<220>
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<222> (73)..(1371)

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gct tgg agg gcg ctc gga ggt gcc gcg cgt tgc cgc gtc acc cta gtt 96
Ala Trp Arg Ala Leu Gly Gly Ala Ala Arg Cys Arg Val Thr Leu Val
-5 -1 1 5

ttg tcc ccg cag aag gca act agc gcc gtc tgc agg agc tca gag gcc 144
Leu Ser Pro Gln Lys Ala Thr Ser Ala Val Cys Arg Ser Ser Glu Ala
10 15 20

acc caa gac agc gaa ctg gcc acg ctg cgc atg cgc ctg ggt cgc cac 192
Thr Gln Asp Ser Glu Leu Ala Thr Leu Arg Met Arg Leu Gly Arg His
25 30 35 40

gag gag ctg ctg cgc gcg ctg caa agg cgt gcg gcg gag ggt ggt gcg 240
Glu Glu Leu Leu Arg Ala Leu Gln Arg Arg Ala Ala Glu Gly Gly Ala
45 50 55

ctc gcg gac gag gtg cgc gca ctg cgc gag cac agt ctc acc ctg aac 288
Leu Ala Asp Glu Val Arg Ala Leu Arg Glu His Ser Leu Thr Leu Asn
60 65 70

acg cgc ctg ggc cag ctg cgc gcg caa ttg cag cag gag gcg agg gcg 336
Thr Arg Leu Gly Gln Leu Arg Ala Gln Leu Gln Gln Glu Ala Arg Ala

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75		80		85		
gag cct gac ctg ggg gcg gag cct gct gct gca ctt ggt ttg cta gcc	384					
Glu Pro Asp Leu Gly Ala Glu Pro Ala Ala Ala Leu Gly Leu Leu Ala						
90		95		100		
gag cgc gcg ctg gac gct gag gcc gaa gcg cgc cgg acg acg gca cgc	432					
Glu Arg Ala Leu Asp Ala Glu Ala Glu Ala Arg Arg Thr Thr Ala Arg						
105		110		115		120
ctg cag cag ctg gac gca cag ctc cgt gag cat gcg cag ctc atg agc	480					
Leu Gln Gln Leu Asp Ala Gln Leu Arg Glu His Ala Gln Leu Met Ser						
125		130		135		
cag cat agc agc ctc ctc ggc cgc ctg caa cgc gcg tgc gcg ggc ccg	528					
Gln His Ser Ser Leu Leu Gly Arg Leu Gln Arg Ala Cys Ala Gly Pro						
140		145		150		
gaa cgg gga cag cag cag gtc ctg cca ctg ccc ctg gcg cct ctg gtg	576					
Glu Arg Gly Gln Gln Gln Val Leu Pro Leu Pro Leu Ala Pro Leu Val						
155		160		165		
cct ctg agc ctc gtg ggc agt gcc agc aac acc agc agg agg ctg gac	624					
Pro Leu Ser Leu Val Gly Ser Ala Ser Asn Thr Ser Arg Arg Leu Asp						
170		175		180		
caa act cca gag cac cag aga gag cag agc ttg aga cag cag ggg cct	672					
Gln Thr Pro Glu His Gln Arg Glu Gln Ser Leu Arg Gln Gln Gly Pro						
185		190		195		200
cca tct tct ctg ctg ccc aca ggc cac ctt gct gtc ccc aca agg cca	720					
Pro Ser Ser Leu Leu Pro Thr Gly His Leu Ala Val Pro Thr Arg Pro						
205		210		215		
gtg ggc cca tgg agg gat tgt gca gag gct cac ggg gca ggt cac tgg	768					
Val Gly Pro Trp Arg Asp Cys Ala Glu Ala His Gly Ala Gly His Trp						
220		225		230		
cag agt gga gtg tat gac ctg cgg ctg ggc cgt cgt gta gta gcc gtg	816					
Gln Ser Gly Val Tyr Asp Leu Arg Leu Gly Arg Arg Val Val Ala Val						
235		240		245		
tgg tgt gaa cag cag cag gaa ggt gga ggc tgg act gtc atc cag aga	864					
Trp Cys Glu Gln Gln Gln Glu Gly Gly Gly Trp Thr Val Ile Gln Arg						
250		255		260		
cgg cag gac ggc tct gtc aac ttc ttc acc aac tgg cag cac tac aag	912					
Arg Gln Asp Gly Ser Val Asn Phe Phe Thr Asn Trp Gln His Tyr Lys						
265		270		275		280
gcg ggc ttt ggg cgt cca gaa gga gaa tac tgg ctg ggc ctg gaa cct	960					
Ala Gly Phe Gly Arg Pro Glu Gly Glu Tyr Trp Leu Gly Leu Glu Pro						
285		290		295		
gtg cat cag gtg aca agc cgt ggg gac cac gag ctg ctg ata ctc cta	1008					
Val His Gln Val Thr Ser Arg Gly Asp His Glu Leu Leu Ile Leu Leu						
300		305		310		
gag gac tgg ggg ggc cgt gca gca cgc gcc cac tac gac agc ttc tcc	1056					
Glu Asp Trp Gly Gly Arg Ala Ala Arg Ala His Tyr Asp Ser Phe Ser						
315		320		325		
ttg gag cct gag agt gac cac tac cgt ctg cgg ctt ggc cag tac cac	1104					

YP-US04017CT(711) SEQUENCE ver 2.txt

Leu	Glu	Pro	Glu	Ser	Asp	His	Tyr	Arg	Leu	Arg	Leu	Gly	Gln	Tyr	His		
330						335					340						
ggc	gat	gcc	gga	gac	tcc	ctc	tct	tgg	cac	aat	gac	aaa	cct	ttc	agc	1152	
Gly	Asp	Ala	Gly	Asp	Ser	Leu	Ser	Trp	His	Asn	Asp	Lys	Pro	Phe	Ser		
345					350				355						360		
act	gtg	gat	agg	gac	aga	gac	tca	tat	tct	ggt	aac	tgt	gcc	ctg	tac	1200	
Thr	Val	Asp	Arg	Asp	Arg	Asp	Ser	Tyr	Ser	Gly	Asn	Cys	Ala	Leu	Tyr		
				365					370					375			
cat	cgt	ggg	ggc	tgg	tgg	tac	cat	gcc	tgt	gcc	cac	tct	aac	ctc	aat	1248	
His	Arg	Gly	Gly	Trp	Trp	Tyr	His	Ala	Cys	Ala	His	Ser	Asn	Leu	Asn		
			380					385					390				
gga	gta	tgg	tat	cat	gga	ggt	cat	tac	cgg	agc	cga	tac	cag	gac	ggg	1296	
Gly	Val	Trp	Tyr	His	Gly	Gly	His	Tyr	Arg	Ser	Arg	Tyr	Gln	Asp	Gly		
		395					400					405					
gtc	tac	tgg	gcc	gag	ttc	cgt	ggt	ggg	gcg	tac	tct	ctg	aag	aaa	gct	1344	
Val	Tyr	Trp	Ala	Glu	Phe	Arg	Gly	Gly	Ala	Tyr	Ser	Leu	Lys	Lys	Ala		
		410				415					420						
gtt	atg	ttg	acc	cgg	ctt	gtg	cgc	ttg	tgactgtccc	atcagtaccc						1391	
Val	Met	Leu	Thr	Arg	Leu	Val	Arg	Leu									
425					430												
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 <212> PRT  
 <213> Mus musculus  
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Met	Gly	Thr	Ala	Arg	Leu	Arg	Lys	Leu	Gln	Leu	Leu	Leu	Leu	Leu	Gly		
				-20					-15						-10		
Ala	Trp	Arg	Ala	Leu	Gly	Gly	Ala	Ala	Arg	Cys	Arg	Val	Thr	Leu	Val		
			-5				-1	1				5					
Leu	Ser	Pro	Gln	Lys	Ala	Thr	Ser	Ala	Val	Cys	Arg	Ser	Ser	Glu	Ala		
	10					15				20							
Thr	Gln	Asp	Ser	Glu	Leu	Ala	Thr	Leu	Arg	Met	Arg	Leu	Gly	Arg	His		
	25				30					35					40		
Glu	Glu	Leu	Leu	Arg	Ala	Leu	Gln	Arg	Arg	Ala	Ala	Glu	Gly	Gly	Ala		
				45					50					55			
Leu	Ala	Asp	Glu	Val	Arg	Ala	Leu	Arg	Glu	His	Ser	Leu	Thr	Leu	Asn		
			60					65					70				
Thr	Arg	Leu	Gly	Gln	Leu	Arg	Ala	Gln	Leu	Gln	Gln	Glu	Ala	Arg	Ala		
		75					80					85					

YP-US04017CT(711) SEQUENCE ver 2.txt

Glu Pro Asp Leu Gly Ala Glu Pro Ala Ala Ala Leu Gly Leu Leu Ala  
 90 95 100  
 Glu Arg Ala Leu Asp Ala Glu Ala Glu Ala Arg Arg Thr Thr Ala Arg  
 105 110 115 120  
 Leu Gln Gln Leu Asp Ala Gln Leu Arg Glu His Ala Gln Leu Met Ser  
 125 130 135  
 Gln His Ser Ser Leu Leu Gly Arg Leu Gln Arg Ala Cys Ala Gly Pro  
 140 145 150  
 Glu Arg Gly Gln Gln Gln Val Leu Pro Leu Pro Leu Ala Pro Leu Val  
 155 160 165  
 Pro Leu Ser Leu Val Gly Ser Ala Ser Asn Thr Ser Arg Arg Leu Asp  
 170 175 180  
 Gln Thr Pro Glu His Gln Arg Glu Gln Ser Leu Arg Gln Gln Gly Pro  
 185 190 195 200  
 Pro Ser Ser Leu Leu Pro Thr Gly His Leu Ala Val Pro Thr Arg Pro  
 205 210 215  
 Val Gly Pro Trp Arg Asp Cys Ala Glu Ala His Gly Ala Gly His Trp  
 220 225 230  
 Gln Ser Gly Val Tyr Asp Leu Arg Leu Gly Arg Arg Val Val Ala Val  
 235 240 245  
 Trp Cys Glu Gln Gln Gln Glu Gly Gly Gly Trp Thr Val Ile Gln Arg  
 250 255 260  
 Arg Gln Asp Gly Ser Val Asn Phe Phe Thr Asn Trp Gln His Tyr Lys  
 265 270 275 280  
 Ala Gly Phe Gly Arg Pro Glu Gly Glu Tyr Trp Leu Gly Leu Glu Pro  
 285 290 295  
 Val His Gln Val Thr Ser Arg Gly Asp His Glu Leu Leu Ile Leu Leu  
 300 305 310  
 Glu Asp Trp Gly Gly Arg Ala Ala Arg Ala His Tyr Asp Ser Phe Ser  
 315 320 325  
 Leu Glu Pro Glu Ser Asp His Tyr Arg Leu Arg Leu Gly Gln Tyr His  
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YP-US04017CT(711) SEQUENCE ver 2.txt  
335 340

Gly Asp Ala Gly Asp Ser Leu Ser Trp His Asn Asp Lys Pro Phe Ser  
345 350 355 360

Thr Val Asp Arg Asp Arg Asp Ser Tyr Ser Gly Asn Cys Ala Leu Tyr  
365 370 375

His Arg Gly Gly Trp Trp Tyr His Ala Cys Ala His Ser Asn Leu Asn  
380 385 390

Gly Val Trp Tyr His Gly Gly His Tyr Arg Ser Arg Tyr Gln Asp Gly  
395 400 405

Val Tyr Trp Ala Glu Phe Arg Gly Gly Ala Tyr Ser Leu Lys Lys Ala  
410 415 420

Val Met Leu Thr Arg Leu Val Arg Leu  
425 430